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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/752,938	12/29/2000	Han-Ming Wu	42390.P10058	9229

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EXAMINER
NGUYEN, HUNG

ART UNIT	PAPER NUMBER
2851	

DATE MAILED: 04/25/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/752,938	WU ET AL.	
	Examiner	Art Unit	
	Hung Henry V Nguyen	2851	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *Amendment filed 2/14/2003* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-17* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-17* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Admitted Prior Art (fig.1) in view of Klebanoff et al (U.S.Pat. 6,153,044) and further in view of Miyaji et al (U.S.Pat. 5,559,584).

With regard to claims 1-17, AAPA discloses all basic claimed features of the invention comprising: a mask protective device (100) including a pellicle (120) that is transparent to a photolithographic radiation; a predetermined pattern mask (110) including a pattern defined at least in part by an opaque portion that is opaque to the photolithography radiation; a wall (130) which connects the mask protective device with the patterned mask wherein the mask protective device, the wall and the patterned mask defining a gas filled enclosure (140) and an orifice (150) is used to equalize the pressure across the pellicle. AAPA lacks to show "a vent to add a first gas to the enclosure and to remove the a second gas from the enclosure, the first gas having a different gas phase composition than the second gas". Klebanoff et al discloses an exposure system having a reticle protective system (100) with an enclosure (110) having a vent for adding a first gas to the enclosure and to remove a second gas from the enclosure. As clearly stated in the previous office action, supplying inert gas having less absorption spectrum in the exposure

wavelength and high transmissivity of the photolithographic radiation, such as nitrogen, argon, etc... into the is well known in the art. For instance, Miyaji et al teaches an exposure apparatus and teaches replacing air containing oxygen in the optical path with "inert gas such as nitrogen to avoid the decrease in the transmittance of light or the generation of ozone in the exposure apparatus" (see Miyaji col.1, line 1 thru col.4, line 51 and figs.1 and 5). It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the teachings of AAPA (Fig.1) and Kelbanoff and Miyaji to obtain the invention as specified in claims 1-15. It would have been obvious to a skilled artisan to employ "a vent" as taught by Klebanoff to the enclosure of AAPA and to add the inert gas to the enclosure and remove the air from the enclosure as suggested by Miyaji for the purpose of keeping the mask from being contaminated and increasing the transmittance of light and whereby improving the quality of the images to be printed.

2. Claims 1-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sego (U.S.Pat. 5,422,704) in view of Miyaji et al (U.S.Pat. 5,559,584).

With regard to claims 1-17, Sego (fig.2) discloses an apparatus comprising substantially all of the limitations of the instant claims including: a patterned reticle (200), a reticle protective membrane (230), a wall (240) which is connected to the reticle protective device and the pattern reticle via an adhesive material (see col.3, line 50) and defining a gas filled enclosure; a vent (261-264) for pressure equalization between the area outside of the enclosure and the area inside enclosure. Sego lacks to disclose "adding the first gas to the enclosure and removing the second gas from the enclosure where the first gas having different gas phase composition than the

second gas". As discussed, Miyaji et al teaches an exposure apparatus and teaches replacing air containing oxygen in the optical path with "inert gas such as nitrogen to avoid the decrease in the transmittance of light or the generation of ozone in the exposure apparatus" (see Miyaji col.1, line 1 thru col.4, line 51 and figs.1 and 5). It would have been obvious to one having ordinary skill in the art at the time the invention was made to combine the teachings of Sego and Miyaji to obtain the invention as specified in claims 1-17. It would have been obvious to a skilled artisan to replace the gas/air inside the enclosure of Sego with the inert gas as suggested by Miyaji for the purpose of keeping the mask from being contaminated and increasing the transmittance of light and whereby improving the quality of the images to be printed.

Response to Amendments/Arguments

3. Applicant's amendments filed February 14, 2003 have been entered. Applicant's arguments with respect to the applied references have been carefully considered but they are not found to be persuasive. The applicant is reminded that the claimed subject matter to examination will be given their broadest reasonable interpretation consistent with the specification, and limitations appearing in the specification are not be read into the claims. In re Yamamoto, 740 F. 2d 1569, 1571, 222 USPO 934, 936 (Fed.Cir. 1984). With this in mind, the discussion herein will focus on how the terms and relationships thereof in the claims are met by the references. Response to any limitation that is not in the claims or any argument that is irrelevant to or does not relate to any specific claimed language will not be warranted.

In response to the office action, the applicant amended independent claim 1 that added "a vent defined by the wall" and then argued that (1) "the reference should not be combined" and

(2) "even if the references are combined...they do not teach or suggest all claim limitations"; the Examiner respectfully disagrees with the applicant since the applied references meet all of the limitations of the invention as broadly claimed. The Applicant is reminded that one can not show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F 2d 413, 208 USPQ 871 (CCPA 1981); *In re Merchk* & Co., 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). The rejection here is made under 35 U.S.C. 103(a). The issue here is whether one of ordinary skill in the art, in the possession of the admitted prior art fig.1, and the applied references, would have incorporated these teachings to come up with the applicant's invention. As noted in the prosecution history of this case, AAPA fig.1 discloses a well-known mask protective device comprising: a mask protective device (100) including a pellicle (120) that is transparent to a photolithographic radiation; a predetermined pattern mask (110) including a pattern defined at least in part by an opaque portion that is opaque to the photolithography radiation; a wall (130) which connects the mask protective device with the patterned mask wherein the mask protective device, the wall and the patterned mask defining a gas filled enclosure (140) and an orifice (150) is used to equalize the pressure across the pellicle. Klebanoff, Miyaji and AAPA are from the same field of endeavor. Klebanoff teaches a device for protecting reticle from particle contamination comprising an enclosure (110) having a vent (127) for adding a first gas to the enclosure and to remove a second gas from the enclosure. Miyaji et al teaches replacing air containing oxygen in the optical path of an exposure apparatus with "inert gas such as nitrogen to avoid the decrease in the transmittance of light or the generation of ozone in the exposure apparatus". Given the mask protective device of AAPA, a purge gas system/a vent of Klebanoff and the teachings of Miyaji,

it would have been obvious to a skilled artisan to come up with the applicant's invention for at least the purpose of keeping the mask from being contaminated and increasing the transmittance of light, as discussed above. The person having ordinary skill in this art is usually a graduate engineer. The Examiner's fails to find applicant's arguments convincing that the claimed invention would have been unobvious to such a person.

Turning now to the 35 U.S.C. 103 rejection of claims 1-17 under the references of Sego and Miyaji, applicant argues that Sego's pressure equalization conduits 261-264 can not be considered as "a vent defined by the wall to add a first gas to the enclosure and to remove a second gas from the enclosure" because purging gas to the enclosure must be performed individually if the pressure equalization conduits (261-264) are used. The Examiner respectfully disagrees with the applicant's interpretation. Sego as modified by Miyaji meets all of the limitations of the claims as recited. The applicant is directed to figure 2 of Sego. Therein it clearly shows that "a vent"/conduits (for example 261, 263) defined by the wall (240) to purge gas/air into or out of the enclosure (220) to allow for pressure equalization (see col.8, lines 9-13). Thus, air addition and removal can be done concurrently. There is no difference whatsoever between the vent of the instant invention as claimed and the conduits of Sego.
There is no evidence that a complete vacuum must be performed in the enclosure of Sego before inert gas can be added as interpreted by Applicant. Finally, applicant argued that claim 13 recites "the inlet opening includes a plurality of discrete ports". However, this in itself would not have involved in any inventive steps since Sego shows conduits 261 and 262 and they can be regarded as "discrete ports" in broadest sense.

4. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Prior Art Made of Record

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Schrijver et al (U.S.Pat. 6,542,220) discloses an exposure apparatus having a compartment supplied with a purge gas and the compartment encloses at least the mask or substrate.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hung Henry V Nguyen whose telephone number is 703-305-6462. The examiner can normally be reached on Monday-Friday (First Friday off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Russ Adams can be reached on 703-308-2847.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-4900.

HENRY HUNG NGUYEN
PRIMARY EXAMINER

hvn
April 23, 2003